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a vacuum chamber;
an ion introducing apparatus connected to said vacuum chamber for doping
a semiconductor layer formed on a substrate with a dopant impurity;
a laser processing apparatus connected to said ion introducing apparatus
through said vacuum chamber for treating said semiconductor layer with a laser light after
said doping; and
a mechanism provided to said vacuum chamber for transporting said
substrate from said ion introducing apparatus to said laser processing apparatus without
exposing said substrate to the air,
said laser processing apparatus comprising a chamber and a laser wherein
a rectangular-shaped laser beam having an elongated cross-section irradiates said [non-
single crystal silicon film] said semiconductor layer,
said dopant impurity being made a plasma around a grid electrode of said
ion introducing apparatus and being accelerated toward said semiconductor layer by a
voltage applied to an anode electrode of said ion introducing apparatus.

54655¹⁰56. (Twice Amended) An apparatus for processing a semiconductor provided
on a substrate comprising:

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a vacuum chamber;
an ion introducing apparatus connected to said vacuum chamber for doping
a semiconductor layer formed on a substantially square substrate with a dopant impurity;
a laser processing apparatus connected to said ion introducing apparatus
through said vacuum chamber for treating said semiconductor layer with a laser light after
said doping; and
a mechanism provided to said vacuum chamber for transporting said
substantially square substrate from said ion introducing apparatus to said laser processing
apparatus without exposing said substantially square substrate to the air,

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said laser processing apparatus comprising a chamber and a laser wherein a rectangular-shaped laser beam having an elongated cross-section irradiates said [non-single crystal silicon film] semiconductor layer and wherein said rectangular-shaped laser beam has a length greater than a width of said substantially square substrate.

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

546 JS 1874. (Amended) An apparatus for processing a semiconductor provided on a substrate comprising:

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a vacuum chamber;

an ion introducing apparatus connected with said vacuum chamber for doping a semiconductor layer formed on a substrate with a dopant impurity;

a laser processing apparatus connected to said ion introducing apparatus through said vacuum chamber for treating said semiconductor layer with a laser light after said doping; and

a mechanism provided to said vacuum chamber for transporting said substrate from said ion introducing apparatus to said laser processing apparatus without exposing said substrate to the air.

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

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Please add new claims 75-91 as follows:

Sub J9 > 25. An apparatus for processing a semiconductor provided on a substrate comprising:

a vacuum chamber;

an ion introducing apparatus connected with said vacuum chamber for doping a semiconductor layer formed on a substrate with a dopant impurity;

a light processing apparatus connected to said ion introducing apparatus through said vacuum chamber for treating said semiconductor layer with an infrared light after said doping; and

a mechanism provided to said vacuum chamber for transporting said substrate from said ion introducing apparatus to said light processing apparatus without exposing said substrate to the air,

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

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76. An apparatus for processing a semiconductor provided on a substrate comprising:

a vacuum chamber;

an ion introducing apparatus connected with said vacuum chamber for doping a semiconductor layer formed on a substrate with a dopant impurity;

a light processing apparatus connected to said ion introducing apparatus through said vacuum chamber for irradiating an infrared light to a part of said semiconductor layer doped with said dopant impurity; and

a mechanism provided to said vacuum chamber for transporting said substrate from said ion introducing apparatus to said light processing apparatus without

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exposing said substrate to the air,

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

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77. An apparatus for processing a semiconductor provided on a substrate comprising:

a vacuum chamber;

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cont. an ion introducing apparatus connected with said vacuum chamber for doping a semiconductor layer formed on a substrate with a dopant impurity;

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cont. a laser processing apparatus connected to said ion introducing apparatus through said vacuum chamber for irradiating a laser light to a part of said semiconductor layer doped with said dopant impurity; and

a mechanism provided to said vacuum chamber for transporting said substrate from said ion introducing apparatus to said laser processing apparatus without exposing said substrate to the air,

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

Sub 1278 The apparatus of claim 75 wherein said infrared light is irradiated to said semiconductor layer in an atmosphere containing nitrogen, ammonia, nitrous oxide or oxygen.

not further limited
79. The apparatus of claim 76 wherein said infrared light is irradiated to said semiconductor layer in an atmosphere containing nitrogen, ammonia, nitrous oxide or oxygen.

80. The apparatus of claim 16 wherein said dopant impurity is doped into said semiconductor layer through a silicon oxide layer formed on said semiconductor layer.

81. The apparatus of claim 56 wherein said dopant impurity is doped into said semiconductor layer through a silicon oxide layer formed on said semiconductor layer.

82. The apparatus of claim 74 wherein said dopant impurity is doped into said semiconductor layer through a silicon oxide layer formed on said semiconductor layer.

83. The apparatus of claim 75 wherein said dopant impurity is doped into said semiconductor layer through a silicon oxide layer formed on said semiconductor layer.

84. The apparatus of claim 76 wherein said dopant impurity is doped into said semiconductor layer through a silicon oxide layer formed on said semiconductor layer.

85. The apparatus of claim 77 wherein said dopant impurity is doped into said semiconductor layer through a silicon oxide layer formed on said semiconductor layer.

86. The apparatus of claim 16 wherein the transportation of said substrate is conducted by a magic hand.

87. The apparatus of claim 56 wherein the transportation of said substrate is conducted by a magic hand.

88. The apparatus of claim 74 wherein the transportation of said substrate is conducted by a magic hand.

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